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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/619,919

07/15/2003

Stephen G. Perlman

08258.P008C

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05/01/2008

THE LAW OFFICES OF BRADLEY J. BEREZNAK

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SUITE 180

MOUNTAIN VIEW, CA 94040

EXAMINER

MILLS, DONALD L

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

05/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/619,919

Applicant(s)

PERLMAN, STEPHEN G.

Examiner

DONALD L. MILLS

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-46 is/are pending in the application.
4a) Of the above claim(s) 37-46 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 28-36 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-850)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Inventor's Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date See Continuation Sheet

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :09/27/2005, 09/30/2005, 10/27/2005, and 02/22/2008.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 28-36 in the reply filed on 20 February 2008 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 28-30, 33, 34, and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Ganz et al. (US 6,584,080 B1), hereinafter referred to as Ganz.

Regarding claim 28, Ganz discloses a wireless burstable communications repeater, which comprises:

A tuning on a channel of a frequency band by a first repeater to determine whether the channel is available for use; testing the channel for reliability by sending data from the first repeater to a next repeater in the chain, and receiving data back from the next repeater by the first repeater; and allocating the channel for use as a transmission link between the first and next repeaters (Referring to Figures 1 and 4, the wireless burstable communications repeater (WBCR) comprises management software **230** which provides for automatic link testing. Radio

segments are automatically tested (tuning on a channel of a frequency band by a first repeater) at regular intervals to confirm the viability of the specific link (available for use). The test is conducted at the data link level by sending special control (testing by sending data form the first repeater) data packets to a specified designation (a next repeater), which then turns the data packets around and echoes them back to the source node (receiving data back from the next repeater by the first repeater). The link tests isolates problem links and steers traffic away from the problem links; thereby, configuring links for use between repeaters. See column 12, lines 22-52.)

Regarding claim 29, Ganz discloses *repeating (a)-(c) for each repeater in the chain* (Referring to Figures 1 and 4, all of the radio segments, between repeaters and users, are tested at regular intervals to confirm the viability of the specific link. See column 12, lines 22-52.)

Regarding claim 30, Ganz discloses *repeating (a)-(c) for each repeater in the chain with each transmission link utilizing a different channel* (Referring to Figures 1, 3, and 4, WBCR comprises management software **230** which provides for automatic link testing. Radio segments are automatically tested at regular intervals to confirm the viability of the specific link. In the “repeater chain” comprising WBCR’s **10** and **100**, utilizing a frequency hopping spread spectrum, the chain would include different hopping sequences that enable the segments between repeaters to coexist in the same geographical area on different channels. See column 12, lines 22-52 and column 7, lines 17-36.)

Regarding claim 33, Ganz discloses *wherein (a)-(c) are performed by at least one processor of the WLAN* (Referring to Figures 1, 3, and 4, WBCR, part of the WLAN, comprises

management software **230** which provides for automatic link testing utilizing a CPU. See column 12, lines 22-52.)

Regarding claim 34, Ganz discloses *wherein (a)-(c) are performed by at least one processor of an access point that functions as a data source* (Referring to Figures 1, 3, and 4, the WBCR comprises management software **230** which provides for automatic link testing. By repeating data and performing the generation and communication of testing data packets, the WBCR acts as a data source See column 12, lines 22-52.)

Regarding claim 36, Ganz discloses *wherein the frequency band comprises a 2.4GHz frequency band* (Referring to Figures 1, 3, and 4, the WBCR operates in the 2.4GHz band. See column 7, lines 17-51.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganz (US 6,584,080 B1) in view of Lau et al. (US 6,690,657 B1), hereinafter referred to as Lau.

Regarding claim 31 as explained in the rejection statement of claim 28, Ganz discloses all of the claim limitations of claim 28 (parent claim).

Ganz does not disclose *monitoring signal quality of the channel during data transmissions*.

Lau teaches a multichannel wireless repeater, which comprises a control circuit **130** that tests the relative strength of signals received on a channel, and then selects a switch configuration for repeating mode that corresponds with the strongest received signal (Referring to Figure 14, see column 8, lines 3-16.) Also, Lau teaches that in a FHSS systems, where a total of twelve hopping frequencies may be allocated, for example, three channels may be used by the repeaters and T/R modules where the channels are based on a single hopping sequence. Channels **CH1**, **CH2**, and **CH3** can hop in a manner that maintains three hopping frequencies of separation between any two active channels. And groups of channels with common suffixes can be simultaneously active and maintain good separation and apparent frequency hop randomness in the network (Referring to Figures 11 and 12, see column 7, lines 16-28.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the signal strength measurement and channeling switching of Lau in the system of Ganz. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to expand the area of coverage serviced by the wireless repeaters while simultaneously allowing for the active transmission of other devices, as taught by Lau (See column 3, lines 14-28 and column 4, lines 6-16.)

Regarding claim 32 as explained in the rejection statement of claim 28, Ganz discloses all of the claim limitations of claim 28 (parent claim).

Ganz does not disclose *switching to a different channel if the signal quality falls below a certain level.*

Lau teaches a multichannel wireless repeater, which comprises a control circuit **130** that tests the relative strength of signals received on a channel, and then selects a switch

configuration for repeating mode that corresponds with the strongest received signal (Referring to Figure 14, see column 8, lines 3-16.) Also, Lau teaches that in a FHSS systems, where a total of twelve hopping frequencies may be allocated, for example, three channels may be used by the repeaters and T/R modules where the channels are based on a single hopping sequence.

Channels **CH1**, **CH2**, and **CH3** can hop in a manner that maintains three hopping frequencies of separation between any two active channels. And groups of channels with common suffixes can be simultaneously active and maintain good separation and apparent frequency hop randomness in the network (Referring to Figures 11 and 12, see column 7, lines 16-28.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the signal strength measurement and channeling switching of Lau in the system of Ganz. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to expand the area of coverage serviced by the wireless repeaters while simultaneously allowing for the active transmission of other devices, as taught by Lau (See column 3, lines 14-28 and column 4, lines 6-16.)

6. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ganz (US 6,584,080 B1) in view of Heinonen et al. (US 6,968,153 B1), hereinafter referred to as Heinonen.

Regarding claim 35 as explained in the rejection statement of claim 28, Ganz discloses all of the claim limitations of claim 28 (parent claim).

Ganz does not disclose *wherein the frequency band comprises a 5GHz frequency band*

Ganz teaches that the radio element circuits incorporate an IEEE 802.11 specification at the 2.4GHz frequency (See column 7, lines 11-19.) Heinonen teaches an apparatus, method and

system for a BluetoothTM repeater, which comprises pairing the transceiver with an IEEE 802.11a (5 GHz frequency band), b (2.4 GHz) and g transceiver to extend the radius the of repeaters range (Referring to Figure 1C, see column 4, lines 4-21.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the multiprotocol transceivers utilizing IEEE 802.11a of Heinonen in the wireless repeater system of Ganz. Essentially, one of ordinary skill in the art at the time of the invention could have easily combined the prior art elements (wireless repeater of Ganz and IEEE 802.11a protocol of the multi-protocol wireless repeater of Heinonen) according to known methods to yield predictable results. Although Ganz does not explicitly disclose utilizing a 5GHz frequency, taught by Heinonen, they do teach utilizing an IEEE 802.11 protocol for their wireless repeater at the 2GHz frequency. Heinonen teaches that one of ordinary skill in the art could have modified a 2GHz frequency repeater to utilize the 5GHz frequency band too. One of ordinary skill in the art at the time of the invention would have readily recognized that a single repeater operating in the 5GHz frequency band was predictable. Therefore, it would have been obvious to modify the wireless repeater operating in the 2GHz frequency band of Ganz to operate as a wireless repeater in the 5Ghz frequency band as taught by Heinonen.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONALD L. MILLS whose telephone number is (571)272-3094. The examiner can normally be reached on 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Donald L Mills/
Examiner, Art Unit 2616
April 24, 2008